

WHAT IS CLAIMED IS:

1. A process for producing propylene in a reactor comprising a first zone positioned upstream from a second zone comprising the steps of:
- (a) in said first zone, contacting a carbonaceous feed having a boiling point greater than about 180°C with a catalyst comprising a crystalline zeolite having an average pore diameter less than about 0.7 nm, thereby forming a pre-coked catalyst; and,
- (b) in said second zone, contacting a naphtha feed containing between about 10 and about 30 wt.% paraffins and between about 15 and about 70 wt.% olefins with said pre-coked catalyst to form a cracked product, the reaction conditions including a temperature from about 500° C to 650° C, a hydrocarbon partial pressure of 10 to 40 psia, a hydrocarbon residence time of 1 to 10 seconds, and a catalyst to feed ratio, by weight, of about 4 to 10, wherein no more than about 20 wt.% of paraffins are converted to olefins and wherein propylene comprises at least 90 mol.% of the total C₃ products.
2. The process of claim 1 wherein the crystalline zeolite is selected from the ZSM series.
3. The process of claim 2 wherein the crystalline zeolite is ZSM-5.
- 20 4. The process of claim 3 wherein propylene comprises at least 95 mol.% of the total C₃ products.
5. The process of claim 3 wherein the reaction temperature is from about 500° C to about 600° C.

6. The process of claim 3 wherein at least about 60 wt.% of the C₅ + olefins in the feed are converted to C₄- products and less than about 25 wt.% of the paraffins are converted to C₄- products.
 7. The process of claim 6 wherein propylene comprises at least about 90 mol.% of the total C₃ products.
 8. The process of claim 7 wherein the weight ratio of propylene to total C₂- products is greater than about 3.5.
 9. The process of claim 8 wherein the weight ratio of propylene to total C₂- products is greater than about 4.0.
 10. The process according to claim 1 further comprising the step of separating the propylene from the cracked product and polymerizing the propylene to form polypropylene.
 11. A process for producing propylene comprising the steps of:
contacting
 - (i) a naphtha feed containing between about 10 and about 30 wt.% paraffins and between about 15 and about 70 wt.% olefins, and
 - (ii) a carbonaceous feed having a boiling point greater than about 180°C

with a catalyst to form a cracked product, the catalyst comprising a crystalline zeolite having an average pore diameter less than about 0.7 nm, the reaction conditions including a temperature from about 500° C to 650° C, a hydrocarbon partial pressure of 10 to 40 psia, a hydrocarbon residence time

of 1 to 10 seconds, and a catalyst to feed ratio, by weight, of about 4 to 10, wherein no more than about 20 wt.% of paraffins are converted to olefins and wherein propylene comprises at least 90 mol.% of the total C₃ products.

12. The process of claim 11 wherein the crystalline zeolite is selected from the
5 ZSM series.
13. The process of claim 12 wherein the crystalline zeolite is ZSM-5.
14. The process of claim 11 wherein propylene comprises at least 95 mol.% of
the total C₃ products.
15. The process of claim 13 wherein the reaction temperature is from about 500°
10 C to about 600° C.
16. The process of claim 15 wherein at least about 60 wt.% of the C₅ + olefins in
the feed is converted to C₄- products and less than about 25 wt.% of the
paraffins are converted to C₄- products.
17. The process of claim 16 wherein the weight ratio of propylene to total C₂-
15 products is greater than about 3.5.
18. The process of claim 17 wherein the weight ratio of propylene to total C₂-
products is greater than about 4.0.
19. The process of claim 11 further comprising the step of separating the
20 propylene from the cracked product and polymerizing the propylene to form
polypropylene.